



**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2014-0194; Directorate Identifier 2014-NM-022-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; The Boeing Company**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for all The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes. This proposed AD was prompted by reports of latently failed fuel shutoff valves discovered during fuel filter replacement. This proposed AD would require revising the maintenance or inspection program to include new airworthiness limitations. We are proposing this AD to detect and correct latent failures of the fuel shutoff valve to the engine, which could result in the inability to shut off fuel to the engine and, in case of certain engine fires, an uncontrollable fire that could lead to wing failure.

**DATES:** We must receive comments on this proposed AD by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-0194; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Rebel Nichols, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: (425) 917-6509; fax: (425) 917-6590; email: rebel.nichols@faa.gov.

### **SUPPLEMENTARY INFORMATION:**

#### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the **ADDRESSES** section. Include “Docket No. FAA-2014-0194; Directorate Identifier 2014-NM-022-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

### **Discussion**

We have received reports of latently failed fuel shutoff valves discovered during fuel filter replacement. Deficiencies in the valve actuator design have resulted in latent failures of the fuel shutoff valve to the engine. This condition, if not detected and corrected, could result in latent failures of the fuel shutoff valve to the engine, which could result in the inability to shut off fuel to the engine and, in case of certain engine fires, an uncontrollable fire that could lead to wing failure.

### **FAA's Determination**

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **Proposed AD Requirements**

This proposed AD would require revising the maintenance or inspection program to include new airworthiness limitations. The airworthiness limitations would allow an operator to perform the operational check as either a maintenance action or a flightcrew action. The flightcrew or maintenance crew would monitor the engine spar valve lights for a few seconds immediately after moving the engine fuel condition levers. Flightcrews can perform this operational check while starting the engine or while shutting down the engine. Maintenance crews can do this operational check as a separate action that does not require actual starting of the engine.

This proposed AD would require revisions to certain operator maintenance documents to include these new inspections. Compliance with these inspections is

required by section 91.403(c) of the Federal Aviation Regulations (14 CFR 91.403(c)). For airplanes that have been previously modified, altered, or repaired in the areas addressed by these inspections, an operator might not be able to accomplish the inspections described in the revisions. In this situation, to comply with 14 CFR 91.403(c), the operator must request approval of an alternative method of compliance (AMOC) in accordance with the provisions of paragraph (i) of this proposed AD. The request should include a description of changes to the proposed inspections that will ensure the continued operational safety of the airplane.

### **Interim Action**

We consider this proposed AD interim action. The manufacturer is currently developing a modification that will address the unsafe condition identified in this proposed AD. Once this modification is developed, approved, and available, we might consider additional rulemaking.

### **Costs of Compliance**

We estimate that this proposed AD affects 1,244 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

<b>Estimated costs</b>				
<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Incorporating Airworthiness Limitation	1 work-hour X \$85 per hour = \$85	\$0	\$85	\$105,740

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This proposed regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

## **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**The Boeing Company:** Docket No. FAA-2014-0194; Directorate Identifier 2014-NM-022-AD.

#### **(a) Comments Due Date**

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to all The Boeing Company Model 737-600, -700, -700C, -800, -900, and -900ER series airplanes, certificated in any category.

#### **(d) Subject**

Joint Aircraft System Component (JASC) Code 2823, Fuel Selector/Shut-off Valve.

#### **(e) Unsafe Condition**

This AD was prompted by reports of latently failed fuel shutoff valves discovered during fuel filter replacement. We are issuing this AD to detect and correct latent failures of the fuel shutoff valve to the engine, which could result in the inability to shut off fuel to the engine and, in case of certain engine fires, an uncontrollable fire that could lead to wing failure.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Revision of Maintenance or Inspection Program**

Within 30 days after the effective date of this AD, revise the maintenance or inspection program, as applicable, to add airworthiness limitation number 28-AWL-MOV, by incorporating the information specified in Figure 1 to paragraph (g) of this AD into the Airworthiness Limitations Section of the Instructions for Continued Airworthiness. The initial compliance time for accomplishing the actions specified in 28-AWL-MOV is within 7 days after accomplishing the maintenance or inspection program revision required by this paragraph.

**Figure 1 to Paragraph (g) of this AD: Engine Shut-Off Valve (Fuel Spar Valve) Position Indication Operational Check**

<b>AWL Number</b>	<b>Task</b>	<b>Interval</b>	<b>Applicability</b>	<b>Description</b>
28-AWL-MOV	ALI	DAILY	737-600, -700, -700C, -800, -900, and -900ER series airplanes	<p><b>Engine Shut-Off Valve (Fuel Spar Valve) Position Indication Operational Check</b></p> <p>Concern: The MOV actuator design can result in airplanes operating with a failed MOV actuator that is not reported. A latently failed MOV actuator could prevent fuel shut off to an engine. In the event of certain engine fires, the potential exists for an engine fire to be uncontrollable.</p> <p>Perform one of the following operational checks of the Fuel Spar Valve position indication (unless checked by the flight crew in a manner approved by the principal operations inspector):</p>

AWL Number	Task	Interval	Applicability	Description
				<p>A. Operational Check during engine shutdown</p> <p>1. Do all operational checks of the left engine fuel spar valve actuator.</p> <p>a. As the ENG 1 START LEVER on the CONTROL STAND is moved to the CUTOFF position, verify the SPAR VALVE CLOSED indication light on the OVERHEAD PANEL for No.1 Engine changes from OFF to BRIGHT then DIM</p> <p>b. If the test fails, (bright light fails to illuminate), before further flight, repair faults as required (refer to Boeing airplane maintenance manual (AMM) 28-22-11).</p> <p>2. Do an operational check of the right engine fuel spar valve actuator.</p> <p>a. As the ENG 2 START LEVER on the CONTROL STAND is moved to the CUTOFF position, verify the SPAR VALVE CLOSED indication light on the OVERHEAD PANEL for No. 2 Engine changes from OFF to BRIGHT then DIM.</p> <p>b. If the test fails, (bright light fails to illuminate), before further flight, repair faults as required (refer to Boeing AMM 28-22-11).</p> <p>B. Operational check during engine start</p> <p>1. Do an operational check of the left engine fuel spar valve actuator.</p>



AWL Number	Task	Interval	Applicability	Description
				<p>a. As the ENG 1 START LEVER on the CONTROL STAND is moved to the IDLE position, verify the SPAR VALVE CLOSED indication light on the OVERHEAD PANEL for No. 1 Engine changes from DIM to BRIGHT then OFF.</p> <p>b. If the test fails, (bright light fails to illuminate), before further flight, repair faults as required (refer to Boeing AMM 28-22-11).</p> <p>2. Do an operational check of the right engine fuel spar valve actuator.</p> <p>a. As the ENG 2 START LEVER on the CONTROL STAND is moved to the IDLE position, verify the SPAR VALVE CLOSED indication light on the OVERHEAD PANEL for No. 2 Engine changes from DIM to BRIGHT then OFF.</p> <p>b. If the test fails, (bright light fails to illuminate), before further flight, repair faults as required (refer to Boeing AMM 28-22-11).</p> <p>C. Operational check without engine operation.</p> <p>1. Make sure No. 1 and No. 2 Engine FIRE switches on the Aft Electronic Panel are in the NORMAL (IN) position.</p> <p>2. Make sure No. 1 and No. 2 Engine Start Switches on the Forward Overhead Panel, are in the OFF or AUTO position.</p> <p>3. Do an operational check of the left engine fuel spar valve</p>

AWL Number	Task	Interval	Applicability	Description
				<p>actuator.</p> <p>a. Move ENG 1 START LEVER on the CONTROL STAND to the IDLE position and wait 10 seconds.</p> <p>NOTE: It is normal under this test condition for the ENG VALVE CLOSED indication light on the OVERHEAD PANEL to transition from DIM to BRIGHT and stay BRIGHT</p> <p>b. Move ENG 1 START LEVER on the CONTROL STAND to the CUTOFF position.</p> <p>c. Verify the SPAR VALVE CLOSED indication light on the OVERHEAD PANEL for No. 1 Engine changes from OFF to BRIGHT then DIM.</p> <p>d. If the test fails, (bright light fails to illuminate), before further flight, repair faults as required (refer to Boeing AMM 28-22-11).</p> <p>4. Do an operational check of the right engine fuel spar valve actuator.</p> <p>a. Move ENG 2 START LEVER on the CONTROL STAND to the IDLE position and wait 10 seconds.</p> <p>NOTE: It is normal under this test condition for the ENG VALVE CLOSED indication light on the OVERHEAD PANEL to transition from DIM to BRIGHT and stay BRIGHT.</p> <p>b. Move ENG 2 START LEVER on the CONTROL STAND to the CUTOFF position.</p> <p>c. Verify the SPAR VALVE CLOSED indication light on the</p>

AWL Number	Task	Interval	Applicability	Description
				OVERHEAD PANEL for No.2 Engine changes from OFF to BRIGHT then DIM. d. If the test fails, (bright light fails to illuminate), before further flight, repair faults as required (refer to Boeing AMM 28-22-11).

**(h) No Alternative Actions and Intervals**

After accomplishment of the maintenance or inspection program revision required by paragraph (g) of this AD, no alternative actions (e.g., inspections) or intervals may be used unless the actions or intervals are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (i)(1) of this AD.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Seattle Aircraft Certification Office (ACO) FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (j) of this AD. Information may be emailed to:

[9-ANM-Seattle-ACO-AMOC-Requests@faa.gov](mailto:9-ANM-Seattle-ACO-AMOC-Requests@faa.gov).

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(j) Related Information**

For more information about this AD, contact Rebel Nichols, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: (425) 917-6509; fax: (425) 917-6590; email: [rebel.nichols@faa.gov](mailto:rebel.nichols@faa.gov).

Issued in Renton, Washington, on April 4, 2014.

**Jeffrey E. Duven,**  
*Manager,*  
*Transport Airplane Directorate,*  
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**[Billing Code: 4910-13-P]**

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